

ADDITIONAL NOTES ON THE GENUS AMASONIA. VII

Harold N. Moldenke

AMASONIA L. f.

Additional synonymy: Diphistema Neck. apud Dalla Torre & Harms, Gen. Siphonog., imp. 1, 431. 1904. Diplostema [Neck.] apud López-Palacios, Fl. Venez. Verb. 648, in syn. 1977.

Additional & emended bibliography: Batsch, Tabl. Aff. Reg. Veg. 193. 1802; Sweet, Hort. Brit., ed. 1, 324 (1826) and ed. 2, 417. 1830; G. Don in Loud., Hort. Brit., ed. 1, 245. 1830; Endl., Gen. Pl. 637. 1838; Sweet, Hort. Brit., ed. 3, 552. 1839; Spach, Hist. Nat. Veg. Phan. 9: 227. 1840; Schau. in A. DC., Prodr. 11: 524—525, 628, & 677—678. 1847; Schnitzl., Iconogr. Fam. Nat. 2: 137 Verbenac. [3]. 1856; Buek, Gen. Spec. Syn. Candoll. 3: 19 & 469. 1858; Kuntze, Rev. Gen. Pl. 2: 502 & 509. 1891; Dalla Torre & Harms, Gen. Siphonog., imp. 1, 43 (1904) and imp. 2, 431. 1963; J. Hutchins., Evol. & Phylog. Flow. Pl. 469 & 667. 1969; Rouleau, Guide Ind. Kew. 11. 1970; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 8, 50, 371, 374, 534, 1126, & 1128. 1973; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Moldenke, Phytologia 29: 21—37 (1974), 29: 505, 507, 508, & 512 (1975), 30: 505 (1975), and 31: 382 & 396. 1975; Asher, Guide Bot. Period. 2: 59. 1975; Hocking, Excerpt. Bot. A.26: 6. 1975; Moldenke, Biol. Abstr. 60: 67. 1975; Follmann-Schrag, Excerpt. Bot. A.26: 502. 1976; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 17: 41. 1976; Moldenke, Phytologia 34: 271 & 498. 1976; Soukup, Biota 11: 2, 6, & 14. 1976; López-Palacios, Fl. Venez. Verb. 9, 11, 20, 185—205, 646, 646, 648, 649, & 653. 1977; Moldenke, Phytologia 40: 228 & 232. 1978.

The Endlicher (1838) reference cited above is often cited as "1836—1856", but the pages involved here were issued in 1838.

It is of interest to note that Spach (1840) still regarded the genus Taligalea Aubl. as distinct from the genus Amasonia.

AMASONIA ANGUSTIFOLIA Mart. & Schau.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 19. 1858; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Moldenke, Phytologia 29: 24. 1974; Hocking, Excerpt. Bot. A.26: 6. 1975; Moldenke, Biol. Abstr. 60: 67. 1975.

AMASONIA ARBOREA H.B.K.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 19. 1858; Moldenke, Phytologia 29: 24—25, 32, & 37. 1974; Moldenke, Biol. Abstr. 60: 67. 1975; López-Palacios, Fl. Venez. Verb. 187—191 & 646, fig. 42. 1977.

Additional illustrations: López-Palacios, Fl. Venez. Verb. [188], fig. 42. 1977.

López-Palacios (1977) cites the following collections from Venezuela: Amazonas: Brewer 20; Cardona 166; Foldats 3627, 3718, 3864; Holt & Blake 471, 483, 729; Holt & Gehriger 273; Maguire, Cowan, & Wurdack 29458, 29960; Maguire & Politi 28055; Maguire, Wurdack, & Bunting 36787; Medina 316, 340; Rutkis 218; Steyermark & Bunting 102910, 103090; Tate 393; Ll. Williams 13981, 15175, 16076, 16112. Bolívar: Bernardi 1488, 1503; Cardona 1637, 2213; Maguire 33214; Steyermark 75388, 90207; Wurdack & Monachino 41047.

The Philipson, Idrobo, & Fernández 1488 and Ruiz-Terán & López-Palacios 11583, distributed as A. arborea, actually are A. lasiocaulos Mart. & Schau.

Additional citations: VENEZUELA: Amazonas: Foldats 248a (N); Steyermark & Bunting 103090 (Mu).

AMASONIA CALYCINA Hook. f.

Additional bibliography: Sweet, Hort. Brit., ed. 1, 1: 324 (1826) and ed. 2, 417. 1830; Loud., Hort. Brit., ed. 2, 552. 1832; Sweet, Hort. Brit., ed. 3, 552. 1839; Moldenke, Phytologia 29: 25-29 & 32. 1974; Moldenke, Biol. Abstr. 60: 67. 1975.

Both Sweet (1830) and Loudon (1832) list this taxon among the species cultivated in British gardens and aver that it was introduced from Trinidad in 1823. They call it the "puniceous amasonia".

AMASONIA CAMPESTRIS (Aubl.) Moldenke

Additional synonymy: Amasonia campestris Moldenke, Phytologia 34: 271, in syn. 1976.

Additional bibliography: Sweet, Hort. Brit., ed. 1, 1: 324. 1826; G. Don in Loud., Hort. Brit., ed. 1, 245. 1830; Sweet, Hort. Brit., ed. 2, 417. 1830; Loud., Hort. Brit., ed. 2, 552. 1832; Sweet, Hort. Brit., ed. 3, 552. 1839; Schau. in A. DC., Prodr. 11: 677-678. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 19 & 469. 1858; Moldenke, Phytologia 29: 23, 25, 27-33, & 35-37. 1974; Moldenke, Biol. Abstr. 60: 67. 1975; Moldenke, Phytologia 34: 271. 1976; Soukup, Biota 11: 6. 1976; López-Palacios, Fl. Venez. Verb. 185-187, 191-196, 646, & 653, fig. 43. 1977; Moldenke, Phytologia 40: 228 & 232. 1978.

Additional illustrations: López-Palacios, Fl. Venez. Verb. [193], fig. 43. 1977.

Recent collectors describe this plant as a perennial herb or subshrub, 30 cm. to 1 m. tall, usually less than 1 m. tall, the stems slightly woody, single, straight, unbranched, deep-purple, the leaves rather dull-green with the midrib purplish beneath,, the inflorescence red and orange, the bracts red or crimson, or merely red on the upper surface, the sepals yellowish-green, and have found it growing in white sand of open savannas, "in natural lithosol campo, thin stony soil on top of bedrock sandstone pavement", "along small streams with marsh on white sand and surrounding cerrado on sandstone rock exposures", "on top part of stony ground costaneira slope covered with cerrado scrub", and "in moist ground, black humic soil, in clearings in low forests", at 350 m. altitude, flowering from January to March and in September,

fruiting in March. The corollas are said to have been "yellow" on Bolten s.n.; on Harley & al. 16707 they were "pale creamy-fawn with red veining within and on the inner side of the limb", while the Eitens say "greenish-yellow, the tube flesh-color and tinged with pink".

López-Palacios (1977) cites the following collections from Venezuela: Anzoátegui: Garroni 75; A. Hernández 38; Pittier 15089. Bolívar: Grosourdy s.n.; Maguire, Wurdack, & Bunting 35955; Pannier 822; Steyermark 86561, 88488; Trujillo 2486; Ll. Williams 13420. Delta Amacuro: Ramía 2151. Falcón: Moritz 623. Guárico: Aristeguieta 2317, 4206, 4246, 5651, 5669; Blydenstein 273; E. Castellanos 61; Lasser 123; Montaldo 3922; Ramía 2583; Tamayo 4115; Trujillo 8608; Vareschi 7389. Monagas: L. Cárdenas 1012; Ijjasz 550; Pittier 14379; Tamayo 3488. Sucre: Funck 134; Lasser & Vareschi 3883. State undetermined: Chaffanjon 147 (P). In a personal communication to me he records "cola de gallo" and "varita de San José" as vernacular names.

Material of A. campestris has been distributed in some herbaria as "Scrophulariaceae".

Additional citations: TRINIDAD AND TOBAGO: Trinidad: Carrick 932 (Kl-3932), 1117a (Kl-7117a), 1117b (Kl-7117b). GUYANA: Bolten s.n. [Mori & Bolten 8304] (Ld, N); Goodland 209 (N). FRENCH GUIANA: Hallé 44 (N), 136 (N). BRAZIL: Bahia: Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 16707 (Ld); Irwin, Grear, Souza, & Reis dos Santos 14681 (N); Irwin, Harley, & Smith 30808 (W-2759080). Goiás: Irwin, Maxwell, & Wasshausen 21390 (N, N). Maranhão: Eiten & Eiten 10356 (W-2757754), 10375 (W-2729349), 10491 (W-2757728). Pará: W. R. Anderson 10530 (N). Piauí: Lützelburg 403 (Mn, Mu).

AMASONIA CAMPESTRIS var. SURINAMENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 29: 33. 1974; Moldenke, Biol. Abstr. 60: 67. 1975.

AMASONIA HIRTA Benth.

Additional bibliography: Schau. in A. DC., Prodr. 11: 678. 1847; Baek, Gen. Spec. Syn. Candoll. 3: 19. 1858; Moldenke, Phytologia 29: 32-35. 1974; Moldenke, Biol. Abstr. 60: 67. 1975.

Pereira describes this plant as an "erva lenhosa, de flores com corola alba-amarelada e cálice e brácteas amarelo coccineo. Héringner refers to it as 30 cm. tall, the "flores clavas com brácteas rosas", flowering in March. Anderson describes it as a suffrutescent perennial herb, 60 cm. tall, the bracts and calyx red, corollas white, and fruit green, and encountered it among rocks "on level grassy campo with scattered shrubs and trees probably recently burned, the soil red", at 1500 m. altitude, in flower and fruit in March.

Additional citations: BRAZIL: Amapá: Sick s.n. [Herb. Brad.

37765] (N). Distrito Federal: Irwin, Souza, & Reis dos Santos 11389 (N, W—2752701); E. Pereiro 8998 (Mu). Goiás: W. R. Anderson 6238 (N), 7013 (N); Heringer 13170 (N); Irwin, Anderson, Stieber, & Lee 34750 (Ld); Irwin, Grear, Souza, & Reis dos Santos 12305 (N), 14296 (N); Irwin, Maxwell, & Wasshausen 18824 (N, N), 18840 (N, N).

AMASONIA LASIOCAULOS Mart. & Schau.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 19. 1858; Kuntze, Rev. Gen. Fl. 2: 509. 1891; Moldenke, Phytologia 29: 25, 32, & 35—37 (1974) and 31: 382. 1975; Moldenke, Biol. Abstr. 60: 67. 1975; Soukup, Biota 11: 6. 1976; López-Palacios, Fl. Venez. Verb. 187, 197—200, & 646, fig. 44. 1977.

Illustrations: Schau. in Mart., Fl. Bras. 9: pl. 48. 1851; López-Palacios, Fl. Venez. Verb. [198], fig. 44. 1977.

Recent collectors refer to this plant as an herb, subshrub, shrublet, or unbranched shrub, 1 m. tall, the bracts red, bright-red, or crimson, the filaments white or light-green, the style light-green, and the anthers brown. They have found it growing in open marshy places, woodlands, and forest shade, as well as in "light-brown sand with carrasco vegetation — a dense secondary scrub formed from arboreal xeromorphic woodland containing mostly Combretum leprosum with some Connarus and Stryphnodendron" at altitudes of 150—433 meters, flowering in January, July, and September.

The corollas are said to have been "cream-color" on Plowman & al. 4242 and "light-green or cream, the upper surface of the limb with red veins" on Eiten & Eiten 10390.

Ruiz-Terán & López-Palacios describe the species as "Sufrútice erecto o recostadizo, 80—120 cm. Tallos unas veces verde intensos, otras veces rojo purpúreos. Hojas opositidecusadas, verde intensas por la haz, algo más claras hasta completamente rojo purpúreas por el envés. Brácteas grandes, foliáceas, viscosas, las proximales de color verde, las restantes rojo escarlatas. Corolas amarillo pálidas cremosas, con visón verdósulos. Planta escasa, muy ornamental." In his 1977 work López-Palacios cites only the following collections from Venezuela: Amazonas: Pannier & Schwabe 936. Bolívar: Ruiz-Terán & López-Palacios 11583.

The Sick s.n. [Herb. Brad. 37765], distributed as A. lasiocaulos, actually is A. hirta Benth.

Additional citations: COLOMBIA: Meta: Philipson, Idrobo, & Fernández 1488 (N); Plowman, Davis, & Jacobs 4242 (Ld). VENEZUELA: Bolívar: Ruiz-Terán & López-Palacios 11583 (Ld). BRAZIL: Maranhão: Eiten & Eiten 10390 (W—2757758).

AMASONIA OBOVATA Gleason

Additional bibliography: Moldenke, Phytologia 29: 37. 1974; Moldenke, Biol. Abstr. 60: 67. 1975; López-Palacios, Fl. Venez. Verb. 187, 200—201, & 646. 1977.

López-Palacios (1977) cites from Venezuela only the following collections: Amazonas: Steyermark 57871, 57980; Tate 902.

Additional citations: VENEZUELA: Amazonas: H. M. Curran 174 (Ld, N).

AMASONIA SPRUCEANA Moldenke

Additional bibliography: Moldenke, *Phytologia* 29: 29 & 37. 1974; Hocking, *Excerpt. Bot. A.* 26: 6. 1975; Moldenke, *Biol. Abstr.* 60: 67. 1975; López-Palacios, *Revist. Fac. Farm. Univ. Los Andes* 17: 41. 1976; López-Palacios, *Fl. Venez. Verb.* 186, 201--204, & 646, fig. 45. 1977.

Illustrations: López-Palacios, *Fl. Venez. Verb.* [202], fig. 45. 1977.

López-Palacios (1975) comments that "Me parece importante repetir lo dicho hace algún tiempo...de que no encuentra muy convincentes las características de esta especie: abundancia de discos en el envés e inflorescencias ramificadas, pues ambas características se ven en otras Amasonias." In his 1977 work he cites on the following collections from Venezuela: Amazonas: Lichi 8; Spruce 3288.

Additional citations: VENEZUELA: Amazonas: H. M. Curran 246 (Ld, N).

ADDITIONAL NOTES ON THE GENUS AVICENNIA. XIII

Harold N. Moldenke

AVICENNIA L.

Additional & emended bibliography: Hook., *Comp. Bot. Mag.* 1: 349. 1836; Hook. & Arn., *Bot. Beech. Voy.* 94, 306, & 449. 1838; Wight, *Icon. Pl. Ind.* 4 (3): 12 & 16, pl. 1481 & 1482. 1849; Linden & Planch., *Fl. Columb., imp.* 1, xxxiii. 1863; J. C. & M. Willis, *Rev. Cat. Flow. Pl. Ceyl.* [Perad. Man. Bot. 2:] 70 & 153. 1911; Hutchins. & Dalz., *Fl. W. Trop. Afr.*, ed. 1, 2: 268, 270, & 613, fig. 271. 1936; Scholander, Hammel, Hemmingsen, & Garey, *Pl. Physiol.* 37: 722. 1962; Malaviya, *Proc. Indian Acad. Sci. B.* 58: 45--50 & 351. 1963; Lombardo, *Fl. Arb. & Arbores. Urug.*, ed. 2, 120. 1964; Snow, *Trans. Roy. Soc. Trop. Med. Hyg.* 64: 477. 1970; Snow, *Biores. Ind.* 7: 331. 1971; Hook, Brown, & Wetmore, *Bot. Gaz.* 133: 445--446. 1972; Rodin in Amiran & Wils., *Coastal Deserts* 157. 1973; Shimony, Fahn, & Reinhold, *New Phytol.* 27: 36, pl. 1-7. 1973; "H. B.", *Biol. Abstr.* 57: 760. 1974; Hocking, *Excerpt. Bot. A.* 25: 378 & 379. 1975; Meylan & Butterfield, *New Zeal. Journ. Bot.* 13: 4. 1975; De Granville, *Cah. O. R. S. T. D. M., Ser. Biol.* 11: 3--22. 1976; Epstein in Lüttge & Pitman, *Transp.*